



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

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MassDEP Response to Comments (RTC) concerning:

MATEP LP's 14.4 MW Combined Heat and Power Project

Prevention of Significant Deterioration Permit
Permit Number NE-14-013
Transmittal Number X259947

Issued July 1, 2016

Introduction

On April 20, 2016, notice was published in the Environmental Monitor, the Boston Herald and several other local newspapers in the Longwood Medical Area for public review and comment on the Draft Prevention of Significant Deterioration (PSD) Permit for MATEP LP's Combined Heat and Power (CHP) Project in Boston, Massachusetts. MassDEP also held a public hearing at the Inn at Longwood in Boston, MA on Monday, May 23, 2016. A number of interested people and organizations submitted comments during the public comment period. The public comment period closed at 5 PM on May 24, 2016.

After careful review of all comments received, MassDEP has made a final decision to issue the PSD Permit. As required by 40 CFR part 124 (Procedures for Decision making), MassDEP has prepared this document, known as the "response to comments" (RTC), that describes and addresses any significant issues raised during the comment period and describes any requirements of the Draft PSD Permit that have been changed and the reasons for the changes and/or clarifications. The PSD Fact Sheet has also been changed and/or clarified from the Draft PSD Fact Sheet, to reflect issues of concern identified during the comment period.

This information is available in alternate format. Call Michelle Waters-Ekanem, Diversity Director, at 617-292-5751. TTY# MassRelay Service 1-800-439-2370

MassDEP Website: www.mass.gov/dep

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MassDEP's decision-making process has benefitted from the public comments and additional information submitted. Any changes to the Draft PSD Permit and the Draft PSD Fact Sheet are described in detail below and are contained in the PSD Permit and PSD Fact Sheet. The analyses underlying any changes are explained in the PSD Fact Sheet and in the responses to comments that follow.

The PSD Permit and RTC are available on MassDEP's website at <http://www.mass.gov/eea/agencies/massdep/about/contacts/matep.html>. MassDEP is providing copies (electronic or hard copy) of the Final PSD Permit and RTC to everyone who commented on the Draft Permit or who requested copies of these documents. Copies of the PSD Permit may also be obtained by writing or calling MassDEP between the hours of 8:45 AM and 5:00 PM, Monday through Friday, excluding holidays:

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MassDEP's REVIEW OF COMMENTS and LIST OF COMMENTERS

MassDEP reviewed the significant comments received from commenters. Comments expressing general opposition to, or general support of, the proposed facility have been reviewed and are reflected in the more specific comments discussed below.

In some cases, MassDEP has included original comments nearly verbatim, for the reader's convenience. In others, MassDEP has included brief summaries of those comments to remind the reader of the topics discussed. Even though each comment submitted has not been reproduced here in its entirety, and many of the details of each comment were not repeated in the summary comments, please be assured that MassDEP has carefully read and considered every comment in its entirety. The form of this RTC is simply designed to structure MassDEP's responses and make them more accessible to the general public. No significance should be attached to the form in which MassDEP cited or summarized the original comment in this RTC. The complete text of every comment as submitted is in the administrative record and available by request.

MassDEP Response to Comments (RTC) concerning:

MATEP LP's 14.4 MW Combined Heat and Power Project

July 1, 2016

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TESTIMONY AND COMMENTS	
NAME & AFFILIATION	DATE RECEIVED
1. Ida E. McDonnell, United States Environmental Protection Agency	05/19/16 hard copy letter
2. Karen T. Gately, Roxbury Tenants of Harvard Association, Inc. (RTH)	05/23/16 hard copy letter Oral testimony at hearing
3. David L. MacIntosh and Margo Rice Jay, Environmental Health & Engineering, Inc.	05/23/16 hard copy letter
4. Eric Wood and Jeff Fullerton, Acentech	05/19/16 hard copy letter (addressed to Karen Gately of RTH) May 19, 2016
5. Andrew H. Cohn, Longwood Medical Energy Collaborative, Inc.	05/23/16 hard copy and emailed copy
6. Roxanne Haecker, resident of RTH	05/24/16 email
7. Maryann Nelson, Mission Hill Health Movement	Oral testimony at hearing
8. Alison Pultinas, Mission Hill	Oral testimony at hearing
9. Susan Watakowski, resident of RTH	Oral testimony at hearing
10. Dolores Pullen, resident of RTH	Oral testimony at hearing
11. Roxanne Haecker, resident of RTH	Oral testimony at hearing

Changes to the PSD Permit and the PSD Fact Sheet

The following is the list of revisions, based upon comments received, that MassDEP made from the Draft PSD Permit to the PSD Permit and from the Draft PSD Fact Sheet to the PSD Fact Sheet. The list includes a brief description of the revision, and the location in the RTC document and PSD Fact Sheet where MassDEP provides a more detailed description of the revision.

1. Changes to PSD Permit – None.
2. Changes to PSD Fact Sheet:
 - Pages 12-14 – Clarifies and reaffirms that the Best Available Control Technology (BACT) analysis for all subject PSD pollutants emitted by the emission unit contained in the Applicant's PSD permit application, were verified by MassDEP during the BACT review process. MassDEP concurred with the BACT emission limits presented with some adjustments during ULSD firing within the combustion turbine. An explanation of the Department's review and analysis of MATEP's PM₁₀ and PM_{2.5} BACT can be found in the Section VI. BACT Analysis, PM₁₀/ PM_{2.5}, of the PSD Fact Sheet. Specifically, the PSD pollutants of particulate matter 10 micron or less in diameter (PM₁₀) / particulate matter 2.5 micron or less in diameter (PM_{2.5}) and Greenhouse Gas (GHG) and have been set forth in the PSD Fact Sheet.
 - Page 15 – Corrected date of Final Air Quality Modeling Protocol.
 - Page 16 – Added description of receptor grid used in modeling to make clear that the modeling analysis did assess impacts at elevations representative of residential housing units in mid-rise buildings near the MATEP facility. The description also explains how the near field portion of the receptor grid covering the immediate surrounding neighborhoods is denser (i.e., more receptors per unit of area) than the far field portion of the grid. The denser near field grid is more than adequate to fully evaluate impacts in neighborhoods such as Mission Hill. The modeled impacts at residential buildings both at ground level and at elevation were below the NAAQS meant to be protective of public health and welfare.
 - Pages 16-17 – Added language addressing EPA's comment on use of significant impact levels (SILs) for demonstrating compliance with PSD Increments. Added language includes a reference to current EPA guidance that explicitly states compliance with the NAAQS and PSD Increments is demonstrated for all pollutants and averaging periods for which impacts are below the SILs. This includes compliance for PM_{2.5} for new or

modified facilities representing the first PSD application in an area that establishes the minor source baseline date for that area. The MATEP LP turbine project is a major source modification that is establishing the PM₁₀ minor source baseline date for Boston and the PM_{2.5} minor source baseline date for Suffolk County. Additional information is provided to show that screening criteria for PM_{2.5} PSD Increment are met. This includes a direct comparison of maximum predicted impacts to the allowable increment values, information on the extent to which an increment has already been consumed, and information on increment consumption or expansion by more distant sources.

- Pages 16-17 – Added language clarifying that the demonstration of compliance with the NAAQS includes elevated receptors representative of nearby mid-rise residential buildings as well as all receptors in and beyond the surrounding neighborhoods.
- Pages 18-19 – Added language explaining why the Kenmore Square air monitoring station is representative of the MATEP area and its surrounding neighborhoods, and was appropriate to use in the air quality impact assessment.
- Page 21 - Added language addressing EPA's comment on lack of consultation with the Federal Land Manager (FLM) for the Lye Brook Wilderness Area, the nearest Class I area to MATEP. The Fact Sheet now documents the consultation with the FLM and the FLM's concurrence that a visibility analysis is not required. The completed FLM Applicability Form and screening analysis, along with FLM's response, is contained in a June 22, 2016 Memorandum Re: Visibility Modeling and Federal Land Manager Notification, from Mr. Vincent Tino, CCM, Epsilon to Mr. Glenn Pacheco. (The memorandum is attached to the RTC and the Fact Sheet as Appendix A).

Responses to Comments

Greenhouse Gas (GHG)

Comments were received pertaining to the GHG emissions, including:

- "...if MassDEP is relying on MATEP's GHG BACT analysis, the permit record should document that MassDEP reviewed MATEP's GHG BACT analysis, agreed with the results and is using the GHG BACT analysis to establish MassDEP's proposed BACT emission limits for GHG." [EPA]
- "...MassDEP should be aware that the GHG emission limit must be met at all times during the life of the gas turbine. Based on industry literature, EPA expects a decrease in efficiency of 2.5% over time even for a well-operated turbine. Considering an unavoidable decrease in efficiency, MassDEP should propose two GHG BACT emission limits: one that applies during initial stack testing and one that applies during ongoing turbine operation. MassDEP should revise the draft permit to include the two GHG emission limits." [EPA]
- "MassDEP proposes MATEP implement several energy efficiency improvement projects to the facility. To make these projects enforceable, MassDEP should include additional recordkeeping and reporting requirements to the draft permit specifying when MATEP needs to complete the improvement projects." [EPA]

Response:

The PSD Fact sheet includes a statement that MassDEP reviewed MATEP's GHG BACT analysis, and agrees with the analysis and results and is using the GHG BACT analysis to establish MassDEP's proposed BACT emission limits for GHG for the MATEP project.

With respect to turbine efficiency degradation, MATEP provided a response to the MassDEP September 14, 2016 Technical Deficiency Comment #6, which was attached to the Draft PSD Fact Sheet and is in the record. In its response, MATEP provides reasoning and precedent for establishing mass limits only for the proposed Combined Heat and Power facility. MATEP does not anticipate an increase in GHG mass emissions over time. As such, an emission limit incorporating turbine efficiency degradations into account is not necessary in this case.

EPA commented on the enforceability of energy efficiency improvement projects that are proposed at the Facility, the identified projects are ongoing facility-wide improvements at MATEP that are not part of the Project. MassDEP notes that the Environmental Impact Report (EIR) provided by MATEP in the Massachusetts Environmental Policy Act (MEPA) process proposed these facility-wide energy improvement project. These environmental and energy commitments are added as Section 61 findings in the Massachusetts Comprehensive Air Plan

Approval (CPA), and are “state-only” enforceable requirements of the MassDEP permit. Through the Section 61 findings, the Proponent committed to funding the mitigation measures discussed. These facility-wide, energy efficiency improvement projects are not a component of PSD GHG BACT. Reference to these commitments has been removed from the PSD Fact Sheet. However, these commitments are enforceable through the state Plan Approval.

Particulate Matter (PM/PM₁₀/PM_{2.5})

Comments were received pertaining to Particulate Matter emissions, including:

- “The fact sheet states that MATEP proposed the best available control technology (BACT) emission limits for particulate matter less than 10 micrometers in diameter (PM₁₀) and particulate matter less than 2.5 micrometers in diameter (PM_{2.5}). If MassDEP is relying on MATEP's analysis, the permit record should document that MassDEP reviewed MATEP's BACT analysis, agreed with the results and is using the BACT analysis to establish MassDEP's proposed BACT emission limits for PM₁₀ and PM_{2.5}.” [EPA]
- “The draft PSD permit includes PM₁₀ and PM_{2.5} emission limits in pounds per million British thermal units (lbs/MMBtu) and pounds per hour (lbs/hr) on a one-hour average for the turbine firing natural gas (NG) and ultralow sulfur distillate (ULSD) operating with and without the duct burner, however, the fact sheet only provides a BACT analysis for PM₁₀ and PM_{2.5} emissions in lbs/MMBtu for the turbine firing NG and ULSD without the duct burner. There is also a separate BACT analysis for PM₁₀ and PM_{2.5} for the duct burner operating independently of the turbine and firing NG. The BACT analysis should be consistent with the proposed emission limits found in the draft PSD permit and should express the emission limits in lbs/MMBtu and lbs/hr for the following:
 - i) Turbine firing NG with and without the duct burner
 - ii) Turbine firing ULSD with and without the duct burner” [EPA]

Response:

To address the issue of establishing BACT emission rates, the Fact Sheet includes a statement that MassDEP has reviewed MATEP's BACT analysis, and agrees with the analysis and results and is using the BACT analysis to establish MassDEP's BACT emission limits for PM₁₀ and PM_{2.5} firing natural gas. MassDEP is imposing a more stringent limit for firing ultra low sulfur distillate fuel (ULSD) in the combustion turbine based on information for comparable facilities as presented in MATEP's BACT analysis.

The August 2014 MATEP PSD application proposed combined, mass-based emissions limitations as BACT for PM₁₀ and PM_{2.5}. After consultation with MassDEP, MATEP agreed to MassDEP's preferred method with the establishment of rate-based and mass-based emission limitations as BACT. Through the permit review process, MATEP supplied MassDEP with

information for MassDEP to impose lb/MMBtu and lb/hr limits as BACT for the turbine firing natural gas (NG) with and without the duct burner, and for the turbine firing ULSD with and without the duct burner.

Air Quality Dispersion Modeling

Comments were received pertaining to the air quality dispersion modeling analyses, including:

- "...The use of significant impact levels (SILs) without additional information on ambient air concentration levels and PSD Increment availability is not sufficient to demonstrate compliance with applicable PSD increments. The difference between the ambient air background concentration and the national ambient air quality standard may be less than the SIL. In addition, previously permitted PSD sources or minor source growth occurring after the minor source baseline date may have consumed available increment to less than the SIL.

Section V.3 of the memorandum Guidance for PM_{2.5} Permit Modeling (May 20, 2014, Stephen D. Page to Regional Air Division Directors) includes a screening test that permitting agencies may use to demonstrate compliance with PSD increments without a cumulative source impact analysis. The screening test requires permitting agencies to conduct the following steps:

- i) Compare the predicted impacts of the new or modified source to the allowable increment values;
- ii) Determine if any increment has already been consumed by construction at major sources performed after the major source baseline date or by all sources after the minor source baseline date;
- iii) Determine if any increment has been consumed by distant sources.

MassDEP should conduct a PSD increment analysis following EPA's PM_{2.5} permit modeling procedures and document the results of this analysis as part of the permit record.

MassDEP should also revise Table 4 by adding a column that includes the available PSD increments for the 24-hour PM₁₀, 24-hour PM_{2.5}, and the annual PM_{2.5}. The table would then show that MATEP's impacts are below both the SILs and the available PSD increment." [EPA]

- "...The fact sheet does not describe any consultation with the Federal Land Manager (FLM) for Lye Brook Wilderness Area, the nearest Class 1 area. MassDEP should provide written notice, including a visibility analysis, to the FLM regarding any permit application triggering major source PSD, per 40 CFR 52.21(p)(1). To determine adverse visibility impacts, FLMs typically request a simple screening analysis consistent with the FLMs' 2010 Air Quality Related Values Work Group (FLAG) Guidance. MassDEP should document this consultation with the FLM and any analyses requested by the FLM in the permit record." [EPA]
- "...To more fully evaluate air quality impacts of the Project, MATEP should extend the air quality modeling analysis to include all floors of the mid-rise building occupied by residents of RTH. Alternatively, monitoring could be required at locations representative of the elevated receptors to determine whether elevated air quality impacts are occurring at nearby residences." [EH&E]
- There is a strong feeling that Mission Hill will be impacted. [Nelson]

Response:

MassDEP reviewed and approved the modeling protocol for this project prior to the publication of the Guidance for PM_{2.5} Permit Modeling (May 20, 2014, Stephen D. Page to Regional Air Division Directors). MassDEP notes that the PSD application for this proposed Project sets the minor source baseline date for both PM₁₀ in Boston and PM_{2.5} in Suffolk County, so it would not be possible for increment-consuming sources to exist in the respective tracking areas. MassDEP summarized the available monitoring data from the Kenmore Square monitoring site in order to document that the use of the SIL is appropriate given the margin between the NAAQS and existing ambient background data for PM₁₀ and PM_{2.5}. Additionally, regarding EPA's comment on more distant sources, this would typically be identified by overlapping significant impact areas. Given that impacts from MATEP are below significant impact levels for all pollutants, no such overlap can occur. Furthermore, a review of PSD permits issued in nearby Middlesex County (cities of Cambridge and Everett) indicates that modeled impacts associated with these sources were also below the SILs for PM₁₀ (PM_{2.5} SILs/NAAQS/Increment did not exist at the time of these PSD applications). The absence of significant impacts implies no or very little PM₁₀ increment consumption from these sources, which are outside the tracking area.

Specific to PM_{2.5}, an EPA memorandum dated June 30, 2015 from Tyler Fox to Proposed Regulatory Docket No. EPA-HQ-OAR-2015-0310 explicitly addresses the use of SILs as

presumptively protective of PSD Increment. That memo contains flow charts on Pages 6 and 7 that illustrate the steps one must follow to show compliance with PSD Increment. Those steps indicate that MATEP is justified in using the SIL as protective of PSD increment.

Regarding PM₁₀, the most recent revision to the Guideline on Air Quality Models (70 FR 68226) states “[w]here dispersion modeling predicts a violation of a NAAQS or PSD increment within the impact area but it is determined that the proposed source will not have a significant impact (i.e., will not be above de minimis levels) at the point and time of the modeled violation, then the permit may be issued immediately...” This analysis shows no modeled-predicted violations precisely because the MATEP Project impacts are below de minimis levels at all points and times (i.e., all impacts are below SILs). Therefore, MATEP project emissions are presumed not to consume PSD increment. No further analysis is necessary.

The Fact Sheet provides an updated table showing that MATEP's impacts are well below both the SILs and the PSD increment, as follows:

Table 4				
Project Maximum Predicted Impact Concentrations Compared to Significant Impact Levels (micrograms/cubic meter)				
Pollutant	Averaging Period	Maximum Predicted MATEP Turbine Project Impact	SIL	PSD Increment*
PM ₁₀	24-Hour	1.092	5	30
PM _{2.5}	24-Hour	0.829	1.2	9
	Annual	0.060	0.3	4

* The entirety of the PM_{2.5} PSD increment is available.

Concerning EPA's comment on lack of consultation with the Federal Land Manager (FLM) for the Lye Brook Wilderness Area, the nearest Class I area to MATEP, the PSD Fact Sheet now documents the consultation with the FLM and the FLM's concurrence that a visibility analysis is not required. The completed FLM Applicability Form and screening analysis, along with FLM's response, is contained in a June 22, 2016 Memorandum Re: Visibility Modeling and Federal Land Manager Notification, from Mr. Vincent Tino, CCM, Epsilon to Mr. Glenn Pacheco. (The memorandum is attached to the RTC and the Fact Sheet as Appendix A).

To address impacts at elevated receptors, MATEP's air quality impact analysis included the placement of four elevated “flagpole” receptors on nearby parking structures: the roof of the Lowry Medical Office Building Garage (at a height of 15.24 meters above ground); one on the roof of the Brigham & Women's Hospital Garage on Francis St (at a height of 18.3 meters above ground); one on the roof of 333 Longwood Garage (at 15.24 meters above ground); and one on

the roof of Children's Hospital Parking Garage (at 21.3 meters above ground). MassDEP believes these elevated receptors are representative of residential units at nearby mid-rise residential buildings. Two of these elevated receptors are located adjacent to the RTH Mosaic Building which, when constructed, will be the closest of the RTH buildings to the MATEP project. Both of these receptors show concentrations for all pollutants modeled well below the NAAQS and Massachusetts Ambient Air Toxic Guideline AALs/TELs.

Regarding impacts at Mission Hill, that location is included in the dense near field modeling receptor grid. The air quality dispersion modeling documents impacts below significant impact levels (SILs), NAAQS, and Massachusetts Ambient Air Toxic Guideline TELs/AALs at all receptors on the grid.

Air Quality Ambient Monitoring

Comments were received pertaining to the air quality ambient monitoring, including:

- "...we note that the air quality impact analysis assumes that the background concentrations of particulate matter that is 2.5 micrometers or smaller in size (PM_{2.5}) and nitrogen dioxide (NO₂) are represented accurately by measurements made at a MassDEP monitoring station in Kenmore Square. A quality assurance project plan, including a statement of data quality objectives, should be developed to ensure that the study has sufficient sensitivity and power to test the hypothesis that air pollutant concentrations are equal between the two locations." [EH&E]
- "...To more fully characterize background air pollution in areas relevant to the Project, MATEP or MassDEP should conduct a limited monitoring study designed to evaluate the assumption that Kenmore Square represents background at RTH is valid..." [EH&E]
- There is an ongoing project to monitor local air quality and the applicant should work to extend and expand that project. [Nelson]
- There are openable windows could allow air quality impacts. [Watakowski, Pullman, Hagar]
- "...request that further air quality testing be done using monitors placed at varying heights and on-site at RTH." [Haecker]

Response:

As indicated in the PSD Fact Sheet, the Kenmore Square (Kenmore) monitoring site, located approximately one mile from the MATEP facility, was utilized for background ambient levels for the Boston area and the Project location in particular. This particular site is representative of

traffic conditions in the Longwood Medical Area as it is located at the intersection of several busy roads. The Kenmore monitoring site is in the vicinity of the source under consideration, according to the Guideline on Air Quality Models (70 FR 68242). The Kenmore monitoring site was established as part of the State or Local Air Monitoring Station (SLAMS) network, and is the closest monitor that “conforms to the same quality assurance and other requirements as those networks established for PSD purposes.” The Kenmore monitoring site fully meets the requirements of 40 CFR Part 51, Appendix W, Section 8.2 in terms of time period, length of record, completeness, and quality of data. Additionally, the project analysis is conservative in that it does not exclude monitored values when the source under consideration is impacting the monitor (i.e., MATEP’s emissions are being modeled and they are also included in air quality levels being measured at Kenmore). No additional study is required to document that the Kenmore ambient air data represents the background for PSD purposes in an air quality impact assessment.

No additional monitoring study is needed for MassDEP to determine that the emissions from the Project do not result in air quality exceeding either the Massachusetts TELs/AALs or National Ambient Air Quality Standards. MassDEP notes that there were comments that requested MATEP’s support of certain ongoing projects to monitor local air quality outside of the established MassDEP ambient monitoring network. MassDEP also notes that MATEP has indicated its willingness to work with RTH outside of the permitting process to fund “air quality awareness efforts.

Natural Gas (NG) and Ultra-Low Sulfur Diesel (ULSD)

Comments were received pertaining to Natural Gas and/or ULSD as follows:

- “...we are concerned about the use of diesel fuel- even ultra-low sulfur- for "periods when natural gas is not available". First of all, what does this mean? Does it mean if gas prices make diesel an appealing, more economical choice upon occasion?” [Haecker]
- ULSD use should be restricted as much as possible. [Pultinas]

Response:

The PSD Permit limits MATEP’s use of ultra-low sulfur diesel fuel in two ways. First, MATEP’s use of ULSD is limited to times when natural gas that cannot be physically supplied to the MATEP facility. MATEP cannot choose to use ULSD based upon economics. Natural gas availability may fluctuate due to a series of potential events. As listed in Table 6 of the PSD Permit, these events include natural gas curtailment by the natural gas supplier or distributor,

instructed/mandated ULSD firing by the electric system operator (ISO New England), conducting of emissions testing, or conducting of required equipment maintenance and testing. Second, the PSD Permit limits the number hours that MATEP may use ULSD to fire the 3rd combustion turbine to 720 operating hours per 12-month rolling time period. The PSD Permit also sets at a maximum firing rate of 1,220 gallons per hour.

The PSD Permit significantly restricts the use of ULSD fuel. MassDEP notes that the original application proposed the use of ULSD fuel for up to 5,000 hours per 12-month period, compared to the 720 hour per 12-month rolling period that MassDEP imposed. In addition, ULSD may be used only during the specific events listed in Table 6.

Technology Selection

Comments were received pertaining to technology selection, including:

- It is unclear on how installation of the turbine could reduce GHG. [Nelson]
- The project may not be necessary given indications that hospitals supported by MATEP will be building their own cogeneration facilities. [Nelson]
- Commenter requests that the developer look at green renewable energy sources instead of carbon fuels. [Nelson]
- Commenter questions the need for the additional capacity, and whether it is tied to new infrastructure in the neighborhood. [Pultinas]
- Commenter requests that the application be reviewed based on technical evaluation rather than the influence of money and politics. [Pullman]

Response:

The installation of a new, cleaner (e.g., less polluting) and highly energy efficient CHP project will provide the opportunity for MATEP to produce electricity, steam, heat, chilled water, etc. more efficiently by displacing some older existing power generating equipment still in operation at the MATEP facility. Furthermore, the new CHP will provide additional capacity for growth in the Longwood Medical Area (LMA). MATEP states that its "CHP project will promote very efficient fuel use by generating both electricity and useful heat." In the MEPA Environmental Impact Report (EIR), MATEP has noted that the existing facility won the EPA 2013 ENERGY STAR® CHP Award by demonstrating "considerable fuel and emissions savings over comparable, state-of-the-art separate heat and power generation." Cleaner fuel use, combined with more efficient energy production, reduces GHG production. MassDEP concurs with the applicant's demonstration of GHG BACT, as reflected by the GHG emission rate and limits in the PSD Permit.

The MEPA EIR for the MATEP CHP project states that the use of solar photovoltaic (or solar hot water) is precluded by the lack of available roof or ground space for solar panels. Existing and planned buildings in the LMA could cause shadowing which would prevent the solar panels from operating efficiently, and that there is no feasible location for a wind turbine or a ground source heat pump system. Based on the EIR analysis, MATEP was not able to utilize green renewable energy sources for their energy needs. In the PSD application, MATEP states that in light of the critical missions of its medical industry customers, and their need for highly reliable service, it has proposed the project to improve MATEP's system reliability.

MassDEP independently reviews permit applications, such as MATEP's, based on the technical merits of the application, as required by the federal Clean Air Act and applicable regulations. Specifically, MassDEP scrutinizes such applications to determine whether an application demonstrates that a proposed project will comply with applicable requirements and standards. When issuing a permit for a project, MassDEP sets forth comprehensive and enforceable conditions for installation and operation of the subject equipment. Accordingly, MassDEP's review of MATEP's permit application review was conducted under and pursuant to the parameters of the federal Clean Air Act and applicable sections of the Code of Federal Regulations.

MassDEP's permit application review does not include a determination as to whether a project is "needed" or findings regarding the financial or political aspects of a project, as such issues are beyond the scope of MassDEP's authority in reviewing permit applications.

MassDEP notes that the record reflects, through MATEP's PSD application, MATEP's statements that the Project is designed to support system reliability, expand service, and improve energy generation efficiency.

Public Outreach

A comment was made pertaining to public outreach:

- Notice should have been placed in the Fenway News. [Pultinas]

Response:

MassDEP notes the comment. The Notice was extensively published, including in the Boston Herald, in the Mission Hill Gazette, El Mundo Boston, Sampan, O Jornal, and the Boston Russian Bulletin. Public outreach is summarized in Section X of the PSD Fact Sheet. The Notice was translated into Spanish, Chinese, Russian, and Portuguese. The draft approvals, fact sheets, and public hearing notices were put on public display at the Boston Public Library (Central Branch and Parker Hill Branch). Documents were posted online at the MassDEP and MATEP websites, and notice was published in the Environmental Monitor. MassDEP concludes that sufficient notice of the Draft PSD Permit and Draft Fact Sheet was provided to the public.

The Following Issues are outside the scope of the federal PSD Permit

Massachusetts Comprehensive Plan Approval

Responses to Comments

Changes to the Plan Approval

The following is the list of revisions that MassDEP made from the Draft CPA to the CPA Approval, based upon comments received. The list includes a brief description of the revision, and the location in the RTC document where MassDEP provides a more detailed description of the revision.

Changes to CPA:

- Page 7 – Corrected date of Final Air Quality Modeling Protocol.
- Page 8 – Added description of receptor grid used in modeling to address the fact that the modeling analysis did assess impacts at elevations representative of residential housing units in mid-rise buildings near the MATEP facility. The description also explains how the near field portion of the receptor grid covering the immediate surrounding neighborhoods is denser (i.e., more receptors per unit of area) than the far field portion of the grid. The denser near field grid is more than adequate to fully evaluate impacts in neighborhoods such as Mission Hill. Those impacts were below the NAAQS meant to be protective of public health and welfare.
- Pages 10-12 – Added language clarifying that the demonstration of compliance with the NAAQS and Massachusetts TELs/AALs includes elevated receptors representative of nearby mid-rise residential buildings as well as all receptors in and beyond the surrounding neighborhoods.

Noise

Comments were received pertaining to noise, as follows:

1. "...the MassDEP Proposed Plan Approval document makes no mention of the new residential building RTH Mosaic on the Riverway ... The noise portion of the MassDEP Proposed Plan Approval document should be updated to also require that post-construction compliance measurements be made and reported for elevations at the new residential building RTH Mosaic on the Riverway..." [Acentech]
2. "...the MassDEP Proposed Plan Approval document makes no mention of the important substantial noise abatement measures that are proposed by MATEP for the Project... The noise portion of the MassDEP Proposed Plan Approval document should be updated to ... require installation of those additional noise abatement measures..." [Acentech]
3. "...the noise portion of the MassDEP Proposed Plan Approval document should be updated with the now-expected future project noise levels that are lower and are expected to comply with both the applicable State noise limits and the local city noise limits..." [Acentech]
4. "...The noise portion of the MassDEP Proposed Plan Approval document should be updated to include the baseline ambient sound measurements ... during a period when minimal equipment was operating at MATEP." [Acentech]
5. "MATEP has submitted a proposal to construct and operate the Chilled Water Upgrade Project that they consider to be separate from the third turbine project. An assessment for MATEP was conducted last year of the sound levels for the Combined Heat and Power Facility Upgrade Project together with the Chilled Water Upgrade Project. MATEP has requested authorization for noise from both Projects together to exceed currently applicable limits. The MassDEP should be aware of and acknowledge publicly the noise implications of these proposed additions at the MATEP." [Acentech]
6. "The noise portion of the MassDEP Proposed Plan Approval document should be updated to include evaluation of "pure tone" noise conditions..." [Acentech]
7. "...the MassDEP Proposed Plan Approval document makes no mention or evaluation of intermittent noise increases and appropriate mitigation requirements, such as associated with steam venting that occurs at MATEP. The noise portion of the MassDEP Proposed Plan Approval document should be updated with the now-expected installation of mufflers for vents operating at MATEP." [Acentech]

8. "Instead of making the above corrective changes to their Proposed Plan Approval document, the Department might prefer to simply replace the entire noise portion of the document with a statement that Noise from the MATEP and proposed additions shall comply with the MassDEP Noise Policy." [Acentech]
9. Commenter notes existing MATEP operations are audible from RTH housing. [Watakowski]

Response:

Regarding the new residential building, RTH Mosaic on the Riverway, representative noise monitoring and modeling locations were identified based on a noise monitoring and modeling protocol provided by MATEP December 9, 2013. The protocol identifies 12 modeled noise receptor locations, which are representative of community noise impacts, including impacts in the direction of the new Mosaic building. MassDEP does not require that applicants perform noise compliance measurements on private property, such as the Mosaic building. MassDEP is aware that MATEP has separately committed to RTH to perform compliance measurements at the Mosaic building, including at elevated locations, in accordance with Boston Air Pollution Control Commission (BAPCC) procedures, and to correct any identified exceedances of BAPCC standards or MassDEP guidelines.

Regarding the comments that more substantial sound abatement measures are proposed for the Facility, the CPA approval addresses noise sources and mitigation measures associated with Project components. MATEP is subject to the MassDEP noise policy and is also subject to BAPCC noise regulations, which are complied with on a different basis and which (in this case) are more stringent than the MassDEP noise policy. MATEP has committed to comply with both MassDEP and BAPCC noise requirements, through separate compliance pathways. MassDEP will enforce the sound levels and sound attenuating strategies/technologies approved in the MassDEP CPA approval.

Regarding the comments concerning the collection of baseline ambient sound levels, MassDEP received, reviewed and approved the protocol submitted by Epsilon Associates, Inc. in January of 2014, prior to measurement program. Pre-permitting, baseline ambient sound levels measured were witnessed by MassDEP personnel on March 28, 2014.

MATEP has submitted a supplemental analysis specifically addressing the comments discussed above. The acoustical analysis indicates that for elevations at the new residential building, RTH Mosaic on the Riverway, accounting for existing MATEP sound levels, expected future Project noise levels, and using baseline ambient sound measurements taken during a period when minimal equipment was operating at MATEP, predicted noise from the existing MATEP and proposed Project additions comply with the MassDEP Noise Policy's 10 dBA allowable increase over background limit. (Memorandum, June 16, 2016, To: Richard Kessel – MATEP, From: Richard Lampeter – Epsilon, Subject: *Response to Comments from Acentech – MATEP*)

MassDEP Sound Level Analysis Relating to the Mosaic Building --- provided as Appendix B to this RTC).

Comments were made about the potential impact of a “Chilled Water Upgrade Project” at the Facility. No such project is under review by MassDEP through the air plan approval process. MATEP informs MassDEP that an unrelated project, with no associated air emissions, was under consideration in the fall of 2015, but has been indefinitely delayed.

With respect to pure tone conditions, Table 13, condition 1 of the CPA Approval states “pure tone sounds, defined as any octave band level which exceeds the levels in adjacent octave bands by 3 dBA or more, are also prohibited. The Permittee, at a minimum, shall ensure that the Facility complies with said Policy.” The CPA approval therefore requires compliance with MassDEP’s policy regarding pure tone conditions. MATEP’s CPA application documented that there are no “pure tones” caused by the turbine installation as defined by the MassDEP Noise Policy predicted at any of the 12 modeled receptor locations.

MATEP has committed to compliance with both MassDEP and BAPCC noise requirements. These requirements will need to be met regardless of any changes to the analysis. As these changes are anticipated to yield lower sound levels, compliance is still predicted.

In response to a commenter’s inquiry regarding intermittent noise increases, MATEP has informed MassDEP that the Project is not expected to generate any new intermittent noise, and will not generally affect the MATEP Facility’s intermittent noise generation. MATEP has separately taken steps to reduce intermittent noise, including the upgrade of mufflers on vents, and has separately committed to RTH to a program to identify and reduce specific intermittent sources of noise. MassDEP notes that MATEP is an existing source of noise, and has reviewed and approved the Project under the Noise Policy, which is designed to protect affected residents and other sensitive occupants of nearby property. MATEP is subject to requirements to mitigate noise impacts from the Project, and to perform testing to document compliance with the noise limits in the CPA.

MassDEP notes the suggestion to replace the noise portion of CPA approval with a general statement that Noise from MATEP and proposed additions shall comply with the MassDEP Noise Policy. MassDEP believes it is more appropriate to describe how the Project will comply with the Noise Policy, and to describe the measures that will ensure the Project complies. The MATEP acoustical analysis indicates sound level increases in the range of 3 to 5 dBA, substantially below the Department’s acceptable sound level increase of 10 dBA above background.

On June 20, 2016, MATEP representatives submitted a supplemental noise analysis in response to comments made by Acentech during the public comment period relating to the new residential building, RTH Mosaic on the Riverway. The document supplements the MATEP MCPA application (Memorandum, June 16, 2016, To: Richard Kessel – MATEP, From: Richard

Lampeter – Epsilon, Subject: *Response to Comments from Acentech – MATEP MassDEP Sound Level Analysis Relating to the Mosaic Building* --- provided as Appendix B to this RTC).

Visual Aesthetics

A comment was received pertaining to visual aesthetics:

- Commenter asks whether aesthetic improvements could be made to existing Facility structures. [Pultinas]

Response:

MassDEP notes that the CPA Approval applies to air emissions from the Project, and does not extend to review of visual impacts. The MATEP Facility is undergoing only minor exterior changes on the roof, and MATEP has noted that those changes were subject to design review per the Boston Redevelopment Authority.

Construction Impacts

A comment was received pertaining to construction impacts:

- Commenter notes that shifting equipment deliveries to off-peak traffic hours can increase noise and traffic impacts to local residents. [Watakowski]
- Commenter said that the agencies have to think about the people who live around here, many of whom live in Victorian homes that have no central air and must rely on windows to cool their homes during the warm months.

Response:

MassDEP notes that MassDEP's review has focused on air emissions from the Project (the project and the construction related air emissions). While MassDEP's authority does not include the review of traffic impacts, the CPA Approval incorporates Section 61 Findings from the Massachusetts Environmental Policy Act (MEPA) process.

MassDEP notes that the Environmental Impact Report (EIR) provided by MATEP in the Massachusetts Environmental Policy Act (MEPA) process indicates that construction impacts will be somewhat limited because most of the construction activity will be performed indoors (i.e., in the space that already exists for the proposed turbine within the MATEP plant). Further, in the EIR, MATEP commits to work with the City of Boston Transportation Department and other stakeholders to minimize impacts during the construction period.

Section 10 of the CPA Approval, "SECTION 61 FINDINGS" identifies the mitigation and Draft Section 61 Findings associated with each State Agency Action identified for this Project by the Single EIR accepted by the Secretary of the Executive Office of Energy and Environmental Affairs. The mitigation measures to avoid, minimize, and mitigate impacts from the project are identified within the CPA Approval, specifically Noise and Construction Period (traffic management and noise).

Traffic impacts will be minimized by utilizing existing unloading areas off of Binney and Francis Streets for materials deliveries and construction equipment. Construction equipment and diesel truck traffic will be the principle noise generating activities at the site. MATEP and their Construction Manager will implement a noise mitigation plan for all contractors and equipment on-site. The sound mitigation shall include but not be limited to the following:

- installation and operation of sound suppressing equipment, such as noise muffler systems;
- construction activities limited to normal working hours, as practicable;
- appropriate traffic management;
- unnecessary idling of construction related equipment will be prohibited;
- construction management oversight to maintain compliance with all mitigation strategies identified in the CAP Approval and the Section 61 Findings of the SEIR.

MassDEP encourages MATEP to work with the City and RTH to minimize and mitigate impacts on its neighbors during the construction of the Project.

Support for the Proposed MATEP CHP Project

Comments were received pertaining to support of the Proposed MATEP CHP Project, including:

- The Longwood Medical Energy Collaborative representing the interests of the hospitals and teaching institutions in the Longwood Medical Area provided comments in support of the MATEP CHP project highlighting the need for reliability in energy supply as well as to address lessons learned from Hurricane Sandy.

Response:

MassDEP duly notes the support for the MATEP CHP project.

Concerns about the Proposed MATEP CHP Project

Comments were received expressing concern about the impact of the Project, including:

- Concern about the people who live in the neighborhood, particularly those who are elderly, disabled, young or have health issues, such as asthma or COPD

Response:

MassDEP notes the concerns that some neighborhood residents have expressed. MassDEP is charged with reviewing applications to determine whether they meet the requirements set forth in the law and regulations. Therefore, MassDEP's environmental engineers conducted an extensive and comprehensive technical review of MATEP's proposed Project.

Based upon MassDEP's review, including review of MATEP's enhanced analysis of impacts and mitigation, MassDEP determined that the Project's ambient air impacts, combined with the pre-existing background levels, meet the federal NAAQS that are designed to protect the public's health against health effects of air pollutants with a margin of safety and will therefore have no significant adverse health impacts.

MassDEP further notes that MassDEP has set forth strict emission limitations, operational restrictions, monitoring, recordkeeping, reporting and testing requirements in the CPA Approval, as well as in the PSD Permit.

CONCLUSION

MassDEP thanks the people who reviewed the Draft PSD Permit and Draft Fact Sheet and provided written comments or testimony at the public hearing. MassDEP's review and the final documents benefited from your participation in the permitting process.

APPENDIX A

Memorandum, June 22, 2016, To Mr. Glenn Pacheco, MassDEP,

From Mr. Vincent Tino, CCM, Epsilon Associates

Re: Visibility Modeling and Federal Land Manager Notification

APPENDIX B

Memorandum, June 16, 2016, To: Richard Kessel – MATEP,

From: Richard Lampeter – Epsilon Associates

***Subject: Response to Comments from Acentech – MATEP MassDEP Sound
Level Analysis Relating to the Mosaic Building***